The Wrack Line

Newsletter of Parker River National Wildlife Refuge • Newburyport, MA

United States Fish & Wildlife Service — Fall, 2016

Stepping Back into History at Hale's Cove

by the Archive Team (volunteers Alix McArdle and Kate Murray)

As the Archive Team has written in previous articles for *The Wrack Line*, portions of the nearly 5,000-acre Parker River National Wildlife Refuge that appear pristine and untouched by humans are actually examples of nature reclaiming her own. The Stage Island industries, including the salt works and the fish drying "stages"; the hotel, dance hall, and restaurants on Grape Island; and the cottage city near Bar Head are all now once again grassy and beachy. On one area of the refuge, however, buildings remain. In her book, *Plum Island, The Way It Was*, author Nancy Weare refers to this area as Hale's Cove. Now called Sub Headquarters, the area is used to store refuge equipment, but it once was the site of the iconic Halfway House (the halfway between the Merrimack River and Sandy Point).

Halfway House, built in the early 1800s, was mentioned by Henry David Thoreau in his 1839 book *A Week on the Concord and Merrimack Rivers*. After walking the full nine-mile length of Plum Island, Thoreau speaks of it as being "without a tree or a sod" and its only "green shrub, the beach plum which gives the island its name, grows but a few feet high." Thoreau's observations were made after the grazing animals had uprooted much of the native grasses and plants. "The Island is scalloped into low hills not more than twenty feet high... and rarely more than a mile wide." Clearly the island continues to shift and grow. "I have walked down the whole length of its broad beach at low tide . . . and probably Massachusetts does not furnish a more grand and dreary walk."

Through the years the Halfway House is believed to have served as a "pest house" for the quarantining of sailors who might have been carrying smallpox, a well-stocked shelter for survivors of boat wrecks,

The Halfway House and Outbuildings in the Early 1900s

and Newbury's first poor house. When inhabited year-round, it served as a boarding house for farm crews harvesting salt hay and, during bad storms, for additional manpower for the nearby Knobbs Life Saving Station. It had a good well and its upland soil, though sandy, supported kitchen gardens and livestock. Its cranberry bogs, evident until fairly recently and well-tended by legendary innkeeper Marm Small, were prolific, yielding hundreds of bushels of fruit. The outbuildings of the Halfway House disappeared in the 1900s and the abandoned main structure was demolished by the refuge in the early 1940s.

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In This Issue...

The History of Hale's Cove

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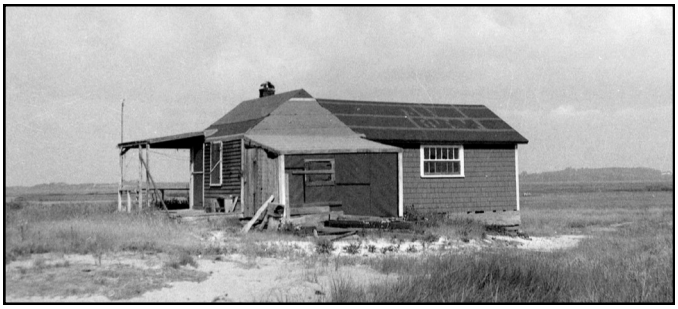
For reasons better understood by hydrologists, the currents opposite the outflow of the substantial Parker River created a natural channel at Hale's Cove, a place where the salt hay gundalows could be beached, loaded up, and ferried back across the Sound to be offloaded on the mainland. This was a favorite landing spot for hunters and clammers as well and, in time, a few camps were built here.

The channel was later enhanced by refuge staff and, if you stand at the far western edge of this maintenance area, near the Tom Stubbs memorial bench, you can see it, especially at low tide.

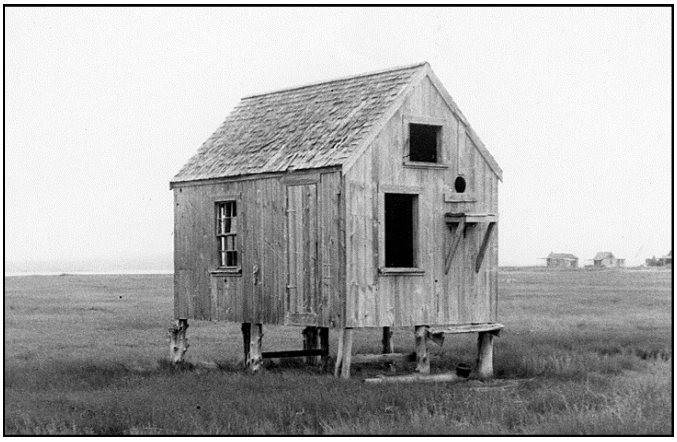
The land has been modified many times and now is at the northernmost end of the dike which created the freshwater impoundments known as North Pool and Bill Forward Pool. Currently, the two large buildings house refuge equipment. The older of the two buildings was built by Red and Hank Walker. Prior to the Coast Guard granting the refuge ownership of its property at the north end of Plum Island (by the Plum Island Lighthouse), and before the opening of the current headquarters on Plum Island Turnpike, woodworking and machine shops and vehicle maintenance bays were all located at Sub Headquarters.

Some visitors to the refuge still refer to the Sub Headquarters area as "The Warden's" in reference to Charles Stafford who, in 1928, built a farmhouse, barn, and poultry pens here (though refuge archaeologists think the barn was moved from elsewhere, as it can be dated to before 1872).

Mr. Stafford became one of the two wardens for Mass Audubon's Annie H. Brown Sanctuary in 1930, which pre-dated the refuge. In later years, his house was occupied by refuge maintenance man Eldred Stanwood. The refuge demolished the old house in 1865. Across the road from Sub Headquarters is Mass Audubon's bird banding station. The Warden's was and remains a favorite birding area.



Harlan Noyes' camp, built by his grandfather Isaac in 1891. Located near the refuge's maintenance building.



Daniel Brown's camp, built in 1869.
This building was used intermittently while mowing salt marsh hay and was located near what is now known as the North Pool Overlook.

Charles Stafford's farmhouse and a portion of the barn.

Charred remains of Stafford's barn, accidentally burned down in April, 1978.

What's With All the Algae?

by Nancy Pau, Wildlife Biologist

As a biologist, my job is to notice changes and trends in the natural cycles of the refuge. I also track the changes that visitors are observing through the questions they ask. One such question that has come up repeatedly this summer has been, "Is there more algae in the salt marsh and, if so, what's causing it?" I put this question to New England's three leading experts in salt marsh ecology: David Burdick, professor at the University of New Hampshire; Susan Adamowicz, salt marsh ecologist for USFWS; and Anne Giblin, director of the Marine Biological Laboratory. The simple answer is, "Yes"; however, the why is more nuanced.

Algae is a name we give to a very diverse group of organisms that include bacteria, diatoms, and plants (seaweed). These organisms are not evolutionally related to each other, but are grouped based on their niche or function in the landscape. Most algae are aquatic and autotropic, meaning that they make their own food, like plants. All algae are very good at capitalizing on available nutrients. That's why algal blooms in freshwater systems are associated with excess nutrient runoff.

An algal mat in the small pond near Sub-Headquarters

In a salt marsh system, a wide variety of different algae are always present. These typically grow in small mud flats called salt pannes as crusty brown, green, or pink mats, and they are only visible when you walk through a salt marsh. What's different this year are the large green algal mats that have been seen in salt marsh pools throughout the summer. This indicates that large amount of nutrients are

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Trivia for Science Geeks

A salt marsh **panne** is a shallow sediment-filled depression that only fills with water on a flooding tide once a month. Pannes are colonized by plants such as glasswort (Salicornia maritima) or short-form Spartina alterniflora. A **pool**, by contrast, is a deep depression with steep sides and is water filled year-round. Pools contain no rooted vegetation. Lots of organisms, including microscopic diatoms, cynobacteria, invertebrates, shrimp and fish live in pools. The algae in pools is mainly Enteromorpha sp, a filamentous (string-forming) algae that belongs to the plant kingdom.

A common algae in the marsh is a purple bacteria which forms pink– to purple-colored mats. While most plants and green algae combine carbon dioxide and water to produce sugar, water, and oxygen, this purple bacteria produces sugar, sulfur and water by combining carbon dioxide and hydrogen sulfide. Because ocean water is high in sulfur, this algae is abundant in salt marshes and helps to give a salt marsh its distinct rotten egg smell.

Click here for more information about all the organisms that live in salt marshes and the different habitats.

30 Years of Piping Plover Conservation at Parker River

by Matt Poole, Visitor Services Manager

Refuge staff have been actively managing for piping plover breeding success since the species was listed as threatened under the federal Endangered Species Act in 1986. I viewed the thirtieth anniversary of the listing as a great opportunity to talk with the refuge staff about what we're doing to help the plover and how those efforts are going. I spoke with Nancy Pau, refuge biologist; Kaytee Hojnacki, biological intern; and Gareth Williams, the refuge's federal wildlife officer.

To recap for our readers, what factors led to the threatened listing?

Kaytee: Beach development and recreation after WWII caused the number of piping plovers to plummet. Development reduced suitable habitat, while recreation increased the amount of disturbance pressure on plovers. These birds are particularly vulnerable to disturbance during the nesting season. The presence of humans can cause plovers either to deem a site unsuitable for nesting or to abandon a nest if the disturbance becomes too great. People can also accidentally crush nests. The disturbance of unfledged chicks can interrupt their feeding, hampering their development at a critical time.

A Piping Plover

Nancy: Piping plovers evolved with a beach habitat that is constantly changing. In addition to increased development (>90%) along the Atlantic coast and heavy recreation, the trend of stabilizing beaches has also decreased and deteriorated breeding habitat for the piping plover.

Our management of the piping plover is guided by a recovery plan. How are our piping plover management efforts informed by that plan?

Nancy: A recovery plan is a road map that explicitly details what we have to do to recover a listed species and to know when we get there. As a national wildlife refuge, we've done as many of the tasks that we can from the recovery plan to benefit the plovers. We have also helped on adjacent beaches, such as the town beaches to the north and Sandy Point State Reservation, in the first decade of plover management. The piping plover was listed as an Atlantic Coast population, with 4 regional populations. Even though our region, New England, has met our population recovery goal, we need to make sure that the other regions can meet theirs before the species can be delisted.

Kaytee: There are multiple recovery tasks that inform our management of the piping plover. These include monitoring population and productivity (conducting pair counts and monitoring each chick to know exactly how many fledge); maintaining natural coastal habitat (no development, stabilization projects, beach raking); reducing disturbance to breeding plovers (why we close our beach); and reducing predation (some years we conduct predator management).

The refuge and other conservation organizations have been managing piping plovers for 30 years. To some, that's a long time. Given the recent years of success, how long do you think we'll need to continue to actively manage for plover breeding success?

Kaytee: Truthfully, forever. And it's actually a criterion for de-listing that management and protection will continue even after de-listing. If management were to cease, then people would once

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A Beginner Naturalist's Guide to the Eastern Red Bat

by Linda Schwartz, Volunteer Refuge Naturalist

The Eastern Red Bat (Lasiurus borealis), a relatively common but rarely seen bat species, is quite different from many of the other bats found in Massachusetts. As their name suggests, these bats have a distinct reddish color. In addition, some females have white tips on their fur, making them appear frosted. Medium in size, the bats measure about four and a quarter inches long and weigh a bit less than half an ounce. Wingspan is approximately 13 inches. These bats do an excellent imitation of a dead leaf when roosting! Eastern Red Bats are difficult to distinguish from the closely related, but separate species, the Western Red Bat, which inhabits western portions of the U.S.

The genus name Lasiurus means "hairy tail" and refers to the bat's long tail and the furry membrane between it and their hind legs. When roosting or hibernating, the bats will often wrap their tails around their bodies for extra warmth.

Unlike other bats, the Eastern Red Bat does not use caves or crevices for roosting. Instead, they will generally roost from four to ten feet off the ground, hanging from the branches of deciduous trees and looking very much like a dead leaf. Occasionally, they will roost in evergreen trees. Red Bats are solitary creatures except during mating and migration. Many of the more familiar bats, by contrast, tend to roost in colonies in caves, tree cavities or sometimes in attics, much to dismay of the home owners. Hibernating red bats have even been found on the ground amongst leaf litter.

Unlike many bat species that roost in caves, the Eastern red bat roosts in trees.

Like many New England bats, Eastern Red Bats are migratory to the southern part of their range in the winter. They can be found from southern Canada down through the Eastern United States, east of the Rockies, to Chile and Argentina. The bats mate in flight during their migration between August and September.

Eastern Red Bats are unusual in that they bear more than the single or pair of offspring that many other species carry. These bats are capable of carrying up to four embryos, though two or three is generally the norm. Like many bat species, Eastern Red Bats are capable of delayed implantation, meaning that though they breed in the fall, the fetus does not begin developing until spring. Babies are born hairless, usually between May and July, and will be able to fly around the age of three to five weeks and then weaning a few weeks later. About 100 species of mammals have this delayed-implantation capability. Among them are some of the weasels such as fishers and western spotted skunks and some otters. Other species with delayed implantation include kangaroos, nutria, armadillos, bears, pinnipeds and some seals.

Like many insect eating bats, the Red Bat uses echo location to find their food. They primarily prey on insects flying about in the evening, but they will land to pick insects off leaves or the ground. They mostly feed in woodlands, near water, on open fields or orchards or on the edges of a pasture or other open areas. Occasionally they are also found hunting around street lights in more urban areas. They generally avoid the most crowded urban area such as cities.

Historically, their numbers are thought to have declined substantially since the 1800s, when large migrating flocks were noted. They are considered a

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Going Batty at Parker River NWR

by Kaytee Hojnacki, Biological Technician

You may have heard about the temporary evening road closures at Parker River NWR during August and early September and wondered, "What is going on?" Oh, just some bat catching, that's all! The biologists here at the refuge were assisting a PhD candidate from UMass Amherst with her research on bat migration. Our target species were the migratory tree bats (eastern red, hoary and silver-haired), as these species migrate south to spend their winters, rather than hibernating with other bats in caves. Unfortunately, this migratory behavior is what makes bats susceptible to collisions with wind turbines. The problem in avoiding these collisions is that very little information is available on bat migratory behavior, routes, or timing. This is where the study comes in.

Growing evidence indicates that the aforementioned bats follow the coastline during their fall migrations. With increasing demand for coastal and off-shore wind farms, the need to know when and to where these bats are migrating is crucial for the proper siting and operation of wind turbines in order to reduce bat fatalities. To track long-distance migration of individual bats, we are using nanotag radio transmitters and automated radio telemetry station technology. This relatively new technology allows thousands of individuals to be on the same radio frequency. Towers constantly scan for particular radio frequencies and then automatically record detections as an animal passes within antenna range. The tower network currently extends from eastern Canada down to the U.S. Atlantic coast.

Preliminary data from 2014 and 2015 shows that some red bats do follow the coast from Maine to Rhode Island during late summer and early fall. The data collected from the nanotags we deployed this year at Parker River NWR and at Acadia National Park in Maine will help shed additional light on movement patterns. In 2014 and 2015, no bat was detected farther south than Rhode Island; however, this may be due to a lack of active towers located toward the south. For 2016, the network of towers was expanded southward, and this should allow us to track the bats further through their migration. Maybe we'll learn that bats are doing what many of us would like to do; spending the winter hanging around a nice warm coastline!

A Hoary Bat Mist Netted During a Recent Refuge Survey

Meet Volunteer Mike Coppinger

by Jean Adams, Outdoor Recreation Planner

Six years ago, after 37 years as a technical support engineer for various companies, including AT &T, Mike Coppinger became one of our most dedicated plover wardens. He has logged more hours protecting the piping plover than any other volunteer plover warden: (8 hours a week, every week for 4 ½ months). Such dedication is admirable and appreciated by both the plover and the people who have come to know Mike as the south boundary warden on duty every Monday and Wednesday, no matter what the weather.

Mike says he has many good memories of people and wildlife interactions. One year, he saw a beaver

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Mike Coppinger, Volunteer Plover Warden

A Guide to the Eastern Red Bat

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species of Least Concern on the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species. They are threatened by things such as controlled burning in areas where they hibernate, as they are known to hibernate on the ground sometimes. Red Bats are frequently one of the most common bat fatalities around wind turbines, more research of the causes of those fatalities needs to be done. Red Bats are a difficult species to study because of their solitary nature. They are frequently found in protected lands, such as Parker River, but they would benefit from habitat management in many other areas with measures such as maintaining trees and hedgerows along the edges of fields. Maintaining large trees in more urban areas would be helpful to the Red Bats for roosting. Planning the timing of controlled burns, in the areas they are known to hibernate, to minimize mortality.

Photo: FWS

An Eastern Red Bat Roosting in a Tree

Meet Volunteer Mike Coppinger

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come ashore. Another year, he watched a plover's nest from incubation to fledging and felt he had helped in their success by protecting them from disturbance. It was tangible proof that plover wardens do make a difference!

In addition, to his volunteer work here, Mike makes deliveries for the Salvation Army, so he cares about people as much as plovers. Mike knows it's a very satisfying feeling to help out. He certainly has over these many years, and it is much appreciated.

Although the plover season is over for 2016, it is not too early to think about joining the ranks of our volunteers who protect the beach and allow for undisturbed resting and nesting of the piping plover. March comes quickly, and I encourage any of you who ever have wanted to be a plover warden to follow Mike's lead and become part of Parker River's volunteer plover protection crew.

A Call for Volunteers!

Refuge staffing has recently become an issue here at Parker River. Due to retirements and reassignment, we're down three staff members compared to last year at this time — positions that are not going to be filled in the near future. Now, more than ever, we need your help. We're looking for volunteers to assist us with our work at the refuge. Below are just some of the roles you can play as a refuge volunteer.

- Plover warden
- Information desk staff
- Educational program creator
- Light maintenance
- Data entry

Work as much or as little as you like! No amount of time is too small. For information on becoming a volunteer, contact Jean Adams. jean_adams@fws.gov ▪ 978-465-5753, ext. 208

The Stewards of the Parker River National Wildlife Refuge

by Chooch Busse, Volunteer Refuge Naturalist

When you look at a wildlife refuge, what do you see? It looks beautiful, of course, and natural and wild. But it's also welcoming to people with a beautiful visitor center, well-maintained paths, and informative exhibits. What does it take to keep a large, complex, wild environment viable and healthy for plants, animals, for you and for many generations to come? Who are the people who work to keep the refuge wild but also to make it a resource for you?

You might be surprised to learn that there are only eight professional staff members at the refuge, covering more than 4,700 acres and areas of expertise as diverse as administration, biology, visitor programs, maintenance, and law enforcement. In fact, these eight staff members have also taken on the duties of three others whose positions have recently been vacated (two due to retirement and one due to a transfer.) We also rely on a dedicated and knowledgeable team of volunteers, providing training and including them in many vital areas of the refuge.

Meet the Refuge Staff

The professional staff were asked to share their background and experience, the rewards and challenges of their jobs, their vision for the future of the refuge, and resources needed to achieve that vision.

Bill Peterson

Refuge Manager
2014 to present

Bill earned a Bachelor of Science in Fisheries and Wildlife Biology from the University of Minnesota and a Master of Science in Wildlife Biology from Louisiana State University, where he conducted research on pintail ducks.

He worked as a biologist and operations specialist, and managed a refuge in Arkansas before joining the Parker River National Wildlife Refuge (PRNWR.) He now manages not only the Parker River NWR, but also the Great Bay and Wapack NWRs in New Hampshire and Thatcher Island NWR in Rockport, MA. His role includes planning, budgeting, and setting priorities for the refuge. As the team leader, he supervises the head of Visitor Services, the Biologist, the Administrative Officer, and the Law Enforcement/Federal Wildlife Officer.

Bill finds his greatest challenge to be setting priorities within a limited budget. For example, he would like to have all invasive species of plants removed from the refuge at the same time; but this is a major project that would require a number of additional professional staff and additional funding, neither of which is available. Instead, invasive plant species are being attacked on a limited basis in specific locations. Another item on Bill's wish list, if staff and funds were available, would be excellent maintenance of all trails at all times in the refuge.

Most rewarding for Bill is the planning of restoration work at Parker River, Great Bay, and Thatcher Island. Especially exciting is the possibility of restoring nesting of the roseate tern on Thatcher Island. He also enjoys working with Visitor Services, following the development and delivery of quality programs, and seeing visitors to the refuge receive them with enthusiasm. Although wildlife management and conservation are the main priorities at the refuge, it's also important to Bill that people learn about the refuge and experience it first-hand. He would like to see more public programs.

Bill's vision for the refuge, simply put, is restoration of the Great Marsh. Excellent research is being done at the refuge to find the most effective strategies for reaching that goal. Bill would also like to form more partnerships with other marsh landowners to work on conservation goals, such as control of invasive species and reduce the negative consequences of salt marsh ditches. Bill hopes that people will gain an even greater appreciation of the work of the U.S. Fish and Wildlife Service, and that they will continue to support the USFWS's land management actions.

Bill mentioned that the Great Marsh is simply beautiful, especially at sunrise and sunset, and he hopes it remains that way for years to come.

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Meet the Refuge Staff

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Nancy Pau

Wildlife Biologist
2002 to present

After earning her B.S. at Cornell, Nancy worked as a land acquisition officer in the U.S. Fish and Wildlife Regional Office. She later moved to California, where she gained experience as an endangered species biologist. In 2002, Nancy left California to join the staff at Parker River. Her duties at the refuge include research, planning, and continuous monitoring to provide scientific input for the refuge's maintenance and restoration. Nancy's input is also essential to Visitor Services, whose staff members rely on her to help with educational programs and outreach to the public, partners, and to organizations such as the Mass Audubon, the Endicott Science Center and various watershed groups.

Climate change affects every part of the refuge system and presents some of Nancy's greatest challenges. Changes in water elevation, beach environments, and other habitats in the refuge are frequent and rapid. Fortunately, many habitats and species are adapting to these changes to some extent, and many threatened areas are beyond the boundaries of the refuge. By the same token, it is important to partner with other groups, especially towns and conservation committees near the Great Marsh, to manage these threats. Although her budget is limited, Nancy has obtained a grant to hire seasonal staff to help observe changes in the marsh and to develop a model for predicting and responding to future problems.

Nancy would love to have the resources to hire another full-time biologist and deputy manager, as well as a grant writer, administrative assistant and a maintenance person. At a time when more staff is needed, three staff members left the refuge this year and will not be replaced. In addition, increased oversight by the federal government requires more administrative paperwork, placing more demands on Nancy and the remaining staff.

Nancy views the refuge as an integral part of the community, contributing to the quality of life for everyone around Plum Island and the Great Marsh and also depending on them to help "keep the Great Marsh great." She is keenly aware of the importance of preserving natural resources not only for their own sake, but also to protect homes, towns, and local economies that benefit from ecotourism. She hopes that PRNWR comes to be seen as a leader in adaptation to climate change. Nancy has seen people gain appreciation of the beauty and importance of the refuge, and she looks forward to working even more closely with nearby communities to manage and protect it.

Matt Poole

Visitor Services
2010 to present

Matt's career in the U.S. Department of the Interior spans almost 30 years, 24 of them with the U.S. Fish and Wildlife Service. Having begun his career as a paramedic, he went on to perform law enforcement as a National Park Service ranger. Except for an eight-year stint at the national training center in West Virginia, where he led and instructed leadership development and refuge management courses, Matt has spent most of his USFWS career doing visitor services work with a focus on environmental education, interpretation, and communications. His educational background includes a B.S. in Recreation and Park Management from the University of Maine and a M.S. in Environmental Science from Antioch University New England.

At Parker River, Matt's job is to develop programs and training opportunities for the public with an eye to educating and motivating them to become conservationists. He supervises the Outdoor Recreation Planner and the Administrative Assistant. The refuge serves as an outdoor classroom, and Matt works with his colleagues to find creative ways to leverage its conservation education value. He manages a 12-month Naturalist Training Program, offered every two or three years to volunteers who

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Meet the Refuge Staff

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subsequently go on to serve the refuge in various capacities. He also works with volunteers to produce *The Wrack Line* – the refuge's quarterly newsletter. Matt turned his passion for nature and wildlife photography into a very active photography program at the refuge. The results are often on view at the visitor center.

Matt finds his greatest challenges, and also his greatest rewards, in balancing the sometimes conflicting goals of opening the refuge to public enjoyment and education while also protecting it from overuse and damage. He also enjoys interaction with the public, teamwork, the creative process of program development, and the satisfaction of taking a project from inception to completion.

Matt's vision for the future includes continued growth of visitor service programs, expanded volunteer training and service opportunities, and the establishment of new partnerships with other organizations and agencies.

Jean Adams

Outdoor Recreation Planner, Visitor Services
1999 to present

After earning a B.S. in Wildlife Biology and Environmental Science at Cornell, Jean gained experience in various federal and state agencies throughout the country. At the PRNWR, she coordinates the volunteer program, works with refuge partners from other agencies, manages public traffic and the gatehouse, tracks the money generated by entrance fees, leads behind-the-scenes tours, coordinates signage, and also helps with refuge maintenance.

Jean particularly likes working with refuge visitors (nearly 250,000 annually from all over the world) and seeing their enjoyment and appreciation of this special environment. She loves working in the field, especially on weekends when visitation is at its peak. Jean finds comfort in knowing that there is still open space for both people and wildlife. As she says to groups of visiting children, "If the refuge weren't here, where would the animals go? Where would the birds nest?"

Another of Jean's greatest rewards is working with refuge volunteers. She knows that volunteers are essential to the refuge in providing programs and services to visitors, and she admires their willingness to give of their time and energy so freely. The work challenges Jean to manage her own expectations, neither asking too much nor expecting too little of her volunteers.

Gareth Williams

Federal Wildlife Officer/ Law Enforcement
2013 to present

Gareth began his college career in civil engineering at Northeastern University. After one year, however, he realized that he wanted a career related to his passion for the outdoors. He had grown up hunting and fishing with family and friends in his youth. While completing the state's required hunter education course before going to college, he met some Massachusetts Environmental Police Officers. He asked them how he might get a job like theirs, and, remembering the advice they had given him, he decided to enroll in the Wildlife Fisheries Conservation program at the University of Massachusetts, Amherst.

After earning his B.S., Gareth completed the National Park Service's seasonal law enforcement academy and accepted a law enforcement position with the National Park Service, stationed at Boston National Historical Park in Boston, MA. Two years later, he accepted a position as a Federal Wildlife Officer with the U.S. Fish & Wildlife Service and moved to Virginia, where he spent seven years at the Potomac River NWR Complex. Gareth transferred to Parker River National Wildlife Refuge in February 2013.

At the PRNWR, Gareth's primary focus throughout the year is visitor and resource protection. If traffic

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Meet the Refuge Staff

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accidents occur or medical issues arise, he is a first responder and calls upon and works closely with the Newbury Police and Fire Departments, as well as the State Fish and Game agencies. His specific responsibilities shift with the season. In spring and early summer, the refuge has a high volume of visitors, the second highest volume in the region.

During this busy season, Gareth's duties include traffic stops, enforcing speed limits and beach closures, responding to trespassing and disturbance violations, field education, and protection of fragile habitat and migratory birds. He is especially involved with enforcement of beach closures to protect piping plover nesting areas. Mid-summer into fall is a busy fishing season, so Gareth focuses on enforcement of fishing regulations and compliance checks. In fall, he is involved in managing a one-day deer hunt at Parker River NWR and a two-day deer hunt at Great Bay NWR. From fall into winter, another primary focus is waterfowl enforcement. This is duck and goose season, so Gareth completes compliance checks and surveillance efforts to ensure that hunters are observing the limits and following regulations for their chosen hunt area. Winter is the slowest season at the refuge, but Gareth is always on duty to respond to any issues that may arise.

The most rewarding parts of Gareth's job involve interaction with people, including staff teams and the general public, especially helping visitors when they're in trouble and educating them about the refuge. He derives special satisfaction from having a direct and immediate impact on a particular resource and its protection. He mentioned one example: when he enforces the regulation allowing hunters to take only one black duck per day, it gives him the opportunity to explain the impact that overhunting would have on the Refuge. Of course, the other side of this coin is the challenge of dealing with violations and negative behaviors, as well as trying to balance the needs of public access and resource protection.

As for the future, Gareth hopes that staff are able to continue the progress they have made in preserving and protecting the refuge, including the implementation of a long-range conservation plan. He loves the marsh and his role in protecting it, and hopes that more staffing will be available to support both environmental and educational goals. If funding were available, he would like to see positions added for an additional biologist, as well as restoration of the deputy refuge manager, federal wildlife officer, and maintenance positions that were lost.

Peggy Hobbs

Administrative Officer
2013 to present

Since earning her B.S. in Wildlife Biology from Framingham State, Peggy has worked for the U.S. Fish and Wildlife Service for the past 28 years. Before joining the staff at Parker River, she worked at the regional office, Great Bay National Wildlife Refuge, and Great Meadow NWR. She manages the PRNWR budget and also remotely tracks the budgets for six other refuges. She also provides training and guidance for administrative staff at Parker River and other refuges throughout the region.

Peggy finds it especially rewarding to work in such a beautiful place and to be part of a team engaged in such meaningful work. Like other staff members, she also faces challenges. Her responsibilities involve constant multi-tasking to meet the daily needs of so many refuges, manage multiple budgets, and at the same time provide training to other administrative staff.

Since budgets have tended to decrease each year, Peggy faces the challenge of "doing more with less," and she is very much aware that other staff members face similar challenges. Fortunately, the refuge benefits from the support of volunteers and partnerships with communities and agencies. Peggy also notes that all of the staff at the refuge love working there, which, in turn, makes it a very rewarding place for her to work.

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Meet the Refuge Staff

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Denise LaCroix

Administrative Assistant
2015 to present

Denise is the newest staff member at the refuge. She brings with her not only administrative skills, but also experience in customer support and human resource settings. Denise has a bachelor's degree in Business Administration from Hesser College. She supports the entire staff by answering phones, ordering supplies, maintaining a visitor list, scheduling classrooms, and maintaining contact with visiting staff from other refuges. Denise works very closely with Visitor Services in developing press releases, program schedules and a monthly calendar of activities.

Denise finds her interactions with visitors, other staff, and volunteers to be the most rewarding part of her job. Although she has been at the refuge for only a short time, she feels appreciated by the staff and volunteers, and she always looks forward to coming to work. Her greatest challenge at this point is learning as much as possible about the refuge. She reports that she learns something new every day, but that there is still a great deal to learn. Her hope for the refuge is that it remains healthy and available to the public for many years to come.

Bob Springfield

1990 to present

Of the current staff, Bob has worked at Parker River for the longest period of time. As the refuge's full time maintenance employee, he also has the job with the most diverse duties. Whether mowing a refuge field, repairing some type of mechanical contraption, building a shed for refuge kayaks, plowing snow, or installing trail signs at Wapack NWR, Bob is constantly on the go. And there isn't another person on the staff who doesn't require Bob's support for some aspect of their work. He truly is a "jack of all trades and master of most." Another interesting fact about Bob? He previously worked at the refuge as a refuge law enforcement officer and then as a biologist. He finally settled on maintenance as his chosen career field. And the entire staff is glad that he did.

Algae at the Refuge

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becoming available in the marsh. We do not believe that this nutrient excess is coming from outside the system, but is instead a consequence of climate change. In the last few years, we have noticed that the marshes flood more frequently and are staying wet longer when they flood. This water-logging is causing the peat (undecomposed organic matter) to decompose and release nutrients.

The algae may be a warning flag that the balance of our salt marsh system is tipping. We've also noticed other signs that signal changes in our salt marshes. At Parker River, we have been working with salt marsh experts and our Great Marsh partners to understand how the system is changing, and we're testing small restoration techniques to address the increased inundation of algae. Through better understanding of how the salt marsh system is changing and how it responds to targeted restoration, we are striving to help the salt marsh become more resilient to current and future changes.

Piping Plover Conservation

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again dominate the beach, forcing the plovers out, and again leading to a population crash. This is a species that will forever need to be managed to ensure its survival.

Nancy: New England beach managers have done an incredible job with implementing actions to help plovers. On this 30th anniversary, we can say that New England (and specifically Massachusetts) has exceeded the recovery goal of 625 pairs. We have seen an exponential increase in plover pairs in the last 3 years, and that hopefully will translate to other regions meeting their recovery goal in the near future (NY/NJ and Southern (DE to SC) are within 10% of its recovery goal). Because plovers have lost so much habitat to development, we will always have to manage beaches in some fashion to benefit plovers. However, as we exceed our recovery numbers, we can start to be more flexible, as demonstrated in the Massachusetts-wide Habitat Conservation Plan that was approved this year.

Do you foresee any changes in our management approach in the next couple of years?

Nancy: The approach is likely to stay the same; but we're seeing a lot of change both to the beach and the way plovers respond to those changes. So, we may have to be flexible in our management.

"Recovery plan" suggests that the plover population will (hopefully) reach a point when active management efforts (e.g., like closing the refuge beach), may no longer be required. How exactly does the recovery plan define success? And, given that metric, how soon do you think we'll get there?

Kaytee: There are multiple criteria that must be met before the Atlantic coast population of the piping plover can be considered recovered (remember, the three populations are listed independently). First, we need to maintain for five consecutive years a total of 2,000 breeding pairs, distributed among four recovery units. The break-down is as follows: Atlantic Canada = 400 Pairs; New England = 625 Pairs; New York-New Jersey = 575 Pairs; Southern (DE, MD, VA, NC) = 400 Pairs. Next, we need to achieve a five-year average productivity of 1.5 fledged chicks per pair in each of the four recovery units. There are also criteria that involve ensuring

A Nesting Piping Plover

the genetics of the 2,000 pair population is diverse enough so that the population will be self-sustaining and ensuring that long-term agreements are in place to ensure protection and management of both breeding and wintering grounds so that the 2,000 pair and 1.5 fledglings per pair will be maintained. As for when we're going to get there, we still have a way to go and I don't think that anyone is comfortable making that prediction. Current numbers from 2015 are: NE = 920 Pairs, NY/NJ = 405, Southern = 362, and Canada = 179.

Nancy: New England has reached our recovery goal. NY/NJ and Southern (DE to SC) are within 10%. We can be hopeful that breeding pair numbers will increase in those other regions, given the continued success in New England and range wide. In the last 30 years, beach managers and wildlife agencies have done as much as they can towards these recovery goals. Going the last 10% of the way will require the support of everyone, particularly beachgoers. Hurricane Sandy has shown that there are some opportunities for significant boosts for plover populations. As increasing storms create new plover habitat, human society should evaluate if "restoring" beach to where it was pre-storm is needed for infrastructure protection.

Are there particular aspects of the refuge's piping plover management approach that are particularly effective? If so, please explain.

Kaytee: The fact that we close our beach to the public. This essentially eliminates disturbance, allowing the plovers to nest wherever they want. It

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Piping Plover Conservation

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also eliminates stress and excessive energy expended while avoiding people.

Nancy: Although the refuge's beach closure can be controversial, it is also the most important tool we have. The refuge beaches are narrow, and beach use can push plovers out of otherwise good nesting areas. We can see this by the incredible increase in nesting pairs since we started closing the beach in 1991 (5 to 47 pairs).

The last several piping plover breeding seasons on the refuge beach have been characterized as being particularly successful. What exactly does success mean in that context?

Kaytee: An increase in the number of breeding pairs and the number of chicks fledged.

Nancy: In addition to the positive impact of beachgoer compliance with refuge regulations, plovers have benefited from increasing storms that reshaped the beach, providing better quality habitat in the last few years. Having 47 pairs nest on just 6 miles of beach is incredible. Having 74 chicks successfully make it to adulthood was another bonus.

Why is it necessary to close off most of the refuge beach to public access when other beaches with plovers are far less restrictive, such as the Sandy Point State Reservation, Crane Beach, and even the public beach in Revere?

Kaytee: As a national wildlife refuge, it is our responsibility to ensure the recovery of all listed species, so we need to take extra steps to benefit these species, which we do by eliminating ALL disturbances. Those other places protect areas where nests are, but the presence of people near their nesting areas, and especially where chicks are feeding, causes stress and lowers their chances for successful breeding. Also, the narrow nature of our beach makes it nearly impossible to have areas set aside for plovers while also allowing the public to recreate (especially during high tide). Plus, just fencing off areas for nesting doesn't protect the very important feeding areas found in the intertidal zone, so those beaches are only partially protecting the plovers, whereas we're providing full protection for all their needs during the breeding season.

Nancy: In addition to the refuge's narrow beach, the Fish and Wildlife Service has an increased responsibility to recover piping plovers because we are the primary federal agency charged with recovering endangered species for future generations of Americans. The Endangered Species Act was specifically written to place a greater conservation management burden on federal lands. The more we do on federal lands, the more we can diminish the burden on adjacent private and town-owned beaches.

Explain to our readers how effective plover management requires an interdisciplinary team approach.

Kaytee: Biologists do the actual monitoring of the plovers. Visitor services staff educate the public about plovers, their vulnerabilities, and our management. Law enforcement staff confront and educate trespassers about why they should not be on the closed beach.

Nancy: The success of plover recovery thus far can be attributed to the tireless efforts of many partners – from private landowners to beach managers to volunteers. At the refuge, all staff, volunteers, and regulation-compliant beachgoers contribute to helping the plover. Without this team approach, we would not be as successful.

How does the visitor services program contribute to effective piping plover management?

Nancy: Jean Adams contributes a lot to plover recovery by posting mile-markers, helping with beach closures and signs, as well as recruiting, training and managing the cadre of volunteer plover wardens that are crucial to minimizing disturbance and explaining our plover management program.

What role does law enforcement play in piping plover management?

Gareth: The Division of Refuge Law Enforcement's main focus during the piping plover nesting season is to keep human trespass/disturbance to a minimum so the birds have a mostly undisturbed nesting area. Walkers/joggers on the beach, boats landing ashore, people hopping over or ignoring posted gates/signage and photographers wanting to "get the shot" all play a role at times with trespassing issues. Federal law is clear about prohibiting

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Piping Plover Conservation

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boats landing on federal beaches and our refuge-specific statutes prohibit trespass on the refuge beach during the plover breeding season.

Law enforcement staff also assist our biology staff with conducting surveys, as well as working with agencies like the USDA in managing predators like crows, gulls and coyotes after the eggs are on the beach. Should any plovers be harmed or killed by any purposeful human means, federal charges can be sought under the Migratory Bird Treaty Act, or possibly the Endangered Species Act, depending on the actual violation and nature of the crime.

How does the refuge's piping plover management efforts benefit other species?

Kaytee: Least terns, which nest on the beach in a manner similar to the piping plover, are also vulnerable to disturbance, so the beach closure helps them as well. Also, migrating shorebirds take refuge on our closed beach, again finding the disturbance-free beach ideal for resting and refueling for their long journeys.

Nancy: Plover management keeps the beach pristine, natural and wild for other wildlife, as well as for beachgoers looking for that beach experience.

Other than serving as a "plover warden," how can the public contribute to piping plover conservation?

Kaytee: By obeying all closures and roped off areas, never chasing or harassing a plover, keeping dogs off the beach during the nesting season, and keeping cats indoors if they live near the beach.

Nancy: The future of the plovers depends on the visitors. Outside of the refuge, it's important for the public to not only obey, but actively support beach management that benefits plovers.

Is there anything else that you'd like to share about your involvement in piping plover conservation at Parker River?

Nancy: As the wildlife biologist here for the last 14 years, I've been one of the biggest advocates for our beach management policies. As a mom, I have become an advocate in a completely new way. We are lucky to have many beaches to choose from in this area. The refuge and Sandy Point provides a unique beach experience that I've come to treasure. The natural setting and the limited parking provides a tranquil beach experience and an endless supply of discovery for my boys as they search for "treasures" in the wrack.

For those readers who are interested, the recovery plan for the piping plover can be downloaded here.

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